



DOCKET NO: 245494US41X DIV

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

RE APPLICATION OF

FRANCOIS KUBICA

SERIAL NO: 10/716,461

FILED: NOVEMBER 20, 2003

FOR: METHOD FOR OPERATING AN  
AIRCRAFT

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: EXAMINER: BEHNCKE, C.

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: GROUP ART UNIT: 3661

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REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

This is a reply to the Examiner's Answer dated March 26, 2007. This Reply Brief addresses the assertions made in the Examiner's Answer with respect to the original grounds of rejection.

I. REAL PARTY-IN-INTEREST

The real part-in-interest is Airbus France S.A.S.

II. RELATED APPEALS AND INTERFERENCES

The status of related appeals and interferences is the same as provided in the Appeal Brief.

### III. STATUS OF CLAIMS

Claims 1, 3, 7-11, 13, 26, and 28-30 have been finally rejected and form the basis for this appeal. Appendix VIII of the Appeal Brief includes a clean copy of appealed Claims 1, 3, 7-11, 13, 26, and 28-30.

### IV. STATUS OF AMENDMENTS

No amendments after final rejection have been filed.

### V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 is directed to a method for operating an aircraft. The method includes receiving guidance instructions and guidance parameters at a navigation computer, transmitting automatic pilot instructions from the navigation computer to a flight control computer over a dedicated communication link, and receiving control instructions and the automatic pilot instructions at the flight control computer. The method further includes generating a first plurality of operating commands based on the automatic pilot instructions at the flight control computer when in an automatic pilot mode and generating a second plurality of operating commands based on the control instructions at the flight control computer in a manual pilot mode. This method is described in the specification from page 5, line 25 to page 6, line 17, as illustrated by Figure 3. Navigation computer 9A receives guidance instructions over link 11 and guidance parameters over lines 12. Navigation computer 9A transmits automatic pilot instructions to flight control computer 3 over a dedicated communication link 18. Flight control computer receives the automatic pilot instructions over link 18 and control instructions over lines 4. In an automatic pilot mode, flight control computer 3 generates a first plurality of operating commands based on the

automatic pilot instructions. In a manual pilot mode, flight control computer 3 generates a second plurality of operating commands based on the control instructions.

Independent Claim 13 is directed to a method for operating an aircraft. The method includes transmitting automatic pilot instructions from the navigation computer to a flight control computer over a dedicated communication link and receiving control instructions and the automatic pilot instructions at the flight control computer. The method further includes generating a first plurality of operating commands based on the automatic pilot instructions at the flight control computer when in an automatic pilot mode and generating a second plurality of operating commands based on the control instructions at the flight control computer in a manual pilot mode. This method is described in the specification from page 5, line 25 to page 6, line 17, as illustrated by Figure 3. Navigation computer 9A transmits automatic pilot instructions to flight control computer 3 over a dedicated communication link 18. Flight control computer receives the automatic pilot instructions over link 18 and control instructions over lines 4. In an automatic pilot mode, flight control computer 3 generates a first plurality of operating commands based on the automatic pilot instructions. In a manual pilot mode, flight control computer 3 generates a second plurality of operating commands based on the control instructions.

## VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are whether Claims 1, 3, 6-13, 16 and 26-30 are unpatentable under 35 U.S.C. §103(a) over Pages (U.S. Patent No. 5,774,818) in view of Trikha (U.S. Patent No. 6,003,811).

## VII. ARGUMENTS

The Examiner's Answer asserts that the claimed "automatic pilot instructions" is broad enough to cover the guidance parameters sent from computer 12 to automatic piloting device 13 of Pages. The Examiner's Answer further asserts "The specification only supports the definition of 'automatic pilot instructions' as instructions based on the guidance parameters and guidance instructions and used to operate the automatic pilot (Specification, page 2, lines 1-11.)" However, it is respectfully noted that the present specification also describes three exemplary automatic pilot instructions as a commanded vertical load factor, a commanded roll rate, and a commanded yaw.<sup>1</sup> In fact, Claims 9-11 specifically recite these possible automatic pilot instructions, which are known in the art as guidance commands. As noted in the Appeal Brief, the difference between guidance parameters (the *input* to a guidance algorithm) and guidance commands (the *output* of a guidance algorithm) is known to one of skill in the art as described in the document regarding missile guidance attached to the Appeal Brief.<sup>2</sup>

In this regard, the guidance parameters sent from computer 12 to automatic piloting device 13 of Pages are clearly taught by Pages to be a position and route of the next point to be reached.<sup>3</sup> As shown in the attachment, the guidance parameters known to one of skill in the art are  $R$ ,  $\dot{R}$ ,  $LOS$ , and  $\dot{LOS}$ , which are the *input* to a guidance algorithm. The guidance

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<sup>1</sup>See the Specification at page 6, lines 8-13.

<sup>2</sup><http://www.aerospaceweb.org/question/weapons/q0187.shtml>

<sup>3</sup>See Pages, column 5, lines 43-46.

algorithm then produces guidance commands, such as the claimed commanded vertical load factor, a commanded roll rate, and a commanded yaw.

Accordingly, based on the present specification and claims, it is respectfully submitted that one skilled in the art would understand that “automatic pilot instructions” are the output of a guidance algorithm and do not include the guidance parameters (i.e. the position and route of the next point to be reached, which are the input to a guidance algorithm) described by Pages as sent from computer 12 to automatic piloting device 13. Thus, it is respectfully submitted that neither Pages nor Trikha teach or suggest “transmitting *automatic pilot instructions* over a dedicated communication link” as recited in Claim 1.

Further, with respect to Claims 9-11, based on the assertion with respect to Claim 1 that the guidance parameters sent from computer 12 to automatic piloting device 13 of Pages are “automatic pilot instructions,” it is clear that these guidance parameters are not a commanded vertical load factor, a commanded roll rate, and a commanded yaw as recited in Claims 9-11. However, the Examiner’s Answer asserts that “Pages teaches transmitting automatic pilot instructions in the broadest reasonable interpretation over a dedicated communication link, including desired changes in the vehicles flight path. (column 5, lines 12-17 and figure 4). The rejection applied states that it was well known at the time of the invention, to one of ordinary skill in the art, for the instructions and data of vertical load factor, roll rate, and yaw to be used to designate and change a flight path. The data of vertical load factor, roll rate, and yaw are essential to correctly control the aircraft control surfaces and calculate the needed corrections of the actuators to change the aircraft’s flight path.” This assertion misunderstands the teachings of Pages and the present invention as discussed above. Even assuming *arguendo* that “automatic pilot instructions” as recited in Claim 1 is interpreted broadly enough to read on the guidance parameters described by Pages as being sent from computer 12 to automatic piloting device 13 of Pages, the specific recitation of a

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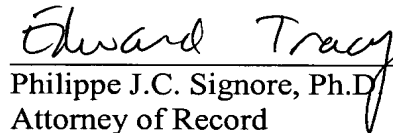
guidance command in Claims 9-11 cannot read on the guidance parameters described by Pages as being sent from computer 12 to automatic piloting device 13 of Pages. Thus, the modification being asserted by the Examiner's Answer with respect to Claims 9-11 is not taught or suggested by either cited reference. Accordingly, a *prima facie* case of obviousness has not been presented with respect to Claims 9-11.

Consequently, independent Claims 1 and 13 are believed to define over the cited art for at least the reasons discussed herein and in the Appeal Brief.

It is respectfully requested that the outstanding rejections be REVERSED.

Respectfully submitted,

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